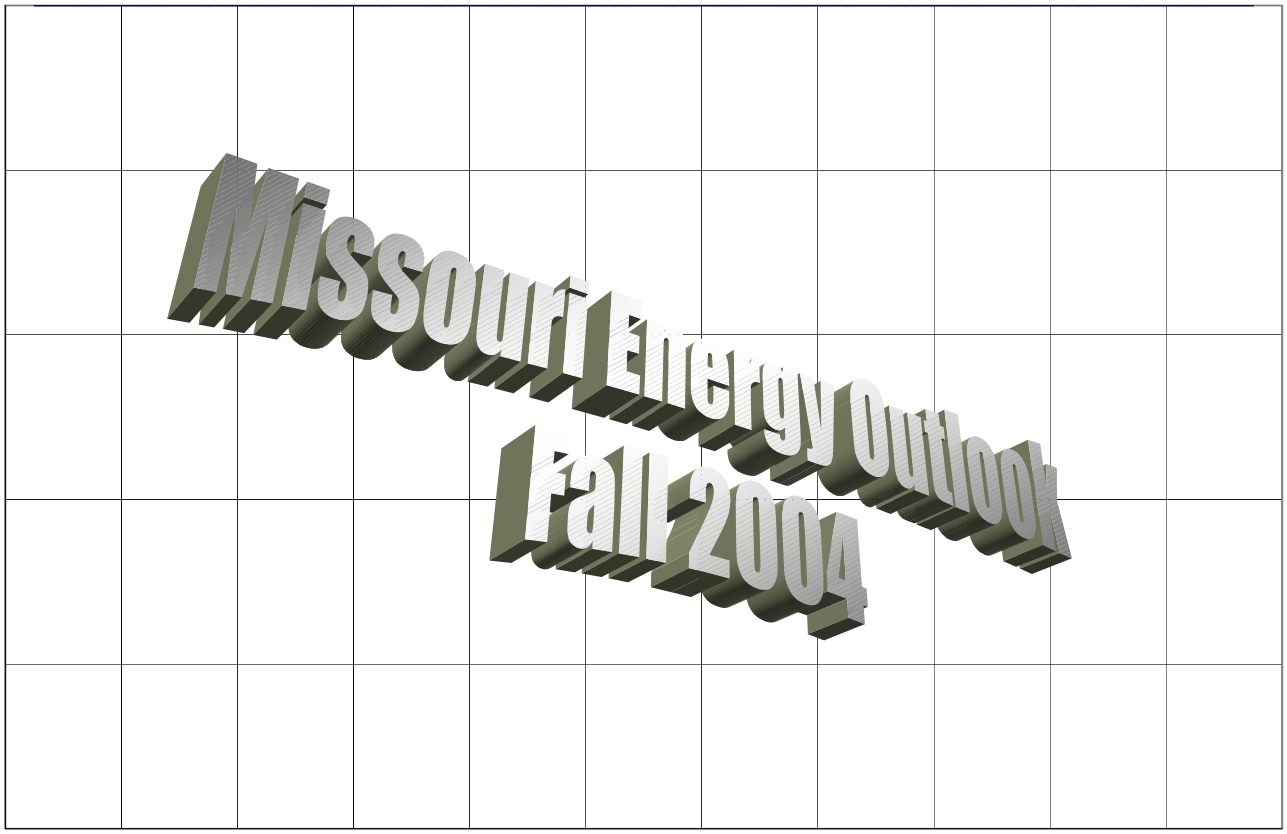

Semiannual Projections Of Energy Supply and Demand Fall Outlook 2004

Missouri Department of Natural Resources

Outreach and Assistance Center
Missouri Energy Center

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The Missouri Energy Outlook – Fall 2004 report was prepared by the Missouri Department of Natural Resources' Energy Center, an office of the department's Outreach and Assistance Center. Sources of information and data contributing to the development of this report include:

1. U.S. Department of Energy's Energy Information Administration, Short Term Energy Outlook, September 8, 2004;
2. U.S. Department of Energy's Energy Information Administration, Short Term Energy Outlook, October 6, 2004;
3. U.S. Department of Energy's Energy Information Administration, Short Term Energy Outlook, November 9, 2004;
4. U.S. Department of Energy's Energy Information Administration, Winter Fuels Outlook: 2004-2005;
5. U.S. Department of Energy's Energy Information Administration, Annual Energy Outlook 2004 with Projections to 2025, January 2004;
6. U.S. Department of Energy's Energy Information Administration, Current and Historical Monthly Retail Sales, Revenues and Average Revenue per Kwh, State and by Sector;
7. U.S. Department of Energy's Energy Information Administration, Natural Gas Sales by Sector, State Profiles;
8. Report of the Governor's Energy Policy Council (June 1, 2003);
9. National Energy Information Center;
10. Missouri Department of Revenue, Motor Fuels/Special Fuels Taxation Reports, 1999-2004;
11. Missouri Public Service Commission;
12. Missouri Department of Economic Development;
13. Missouri Department of Agriculture;
14. Missouri Propane Gas Association; and,
15. Missouri Department of Natural Resources' Missouri Energy Bulletins.

The Missouri Energy Outlook is a semiannual assessment of Missouri's energy markets. The assessment assists in identifying potential supply problems, including adequacy of supply, potential weaknesses in the energy resource distribution system and energy price changes. The focus of this report is on recent events impacting supply and prices, and expected conditions and changes for the next six-month period.

Generally, the fall energy appraisal focuses on the winter heating season and the summer appraisal focuses on issues regarding summer energy use, including gasoline for the summer driving season and electricity supply and demand.

The scope of the analysis varies by energy source. Petroleum markets in the United States, Midwest and Missouri are affected by international as well as domestic market conditions, events and multi-regional refinery operations. Missouri's electricity prices, supply and availability are largely determined by events in the state and the Midwest. The price and supply of natural gas are closely tied to national trends. For the appraisal, recent historical balances between Missouri's energy consumption and supply are analyzed, and consumption and supplies are projected. Actual and expected energy supply levels and prices are reviewed to identify changes that may impact consumer costs.

HIGHLIGHTS
MISSOURI ENERGY APPRAISAL – FALL 2004

Missouri Energy Profile

Missouri depends heavily on energy resources from outside the state, importing more than 95 percent of its primary energy sources in the form of coal, petroleum and natural gas. For more than two decades, however, Missouri has been a net exporter of electricity. In 2000, Missourians paid $13.2 billion for energy, as compared to $11.3 billion in 1999, an increase of about 17 percent (in nominal dollars). The majority of energy that Missourians consume is fossil fuel – coal, petroleum and natural gas. Missouri lacks oil and natural gas resources and has only modest coal resources, which are difficult to use to fuel electrical generating plants because of air quality issues associated with the coal's high sulfur content. The long-term trend of rising energy prices and the impact on Missourians and Missouri's economy demonstrates the important role of energy efficiency and the development of domestic renewable energy resources to reduce our vulnerability to volatile energy markets.

Significantly higher crude oil prices throughout most of the summer, but in particular during the months of August through October, have contributed to higher petroleum products throughout the United States and Missouri, including heating oil as well as natural gas and propane. In the wake of four major hurricanes to impact the coast of Florida, the Mid-Atlantic and Gulf Coast regions of the United States, supplies of crude oil and finished petroleum products have been impacted.

Global factors are also impacting both supply and price of fossil fuels. A surge in crude oil demand by China has contributed to higher crude oil prices and has generated concerns regarding future supplies of oil in the United States. The geopolitical conditions in petroleum producing countries in the Middle East, specifically Iraq, Venezuela and the Niger Delta in Africa are supporting higher global crude and petroleum product prices.

Hurricane Ivan forced the shut-in or temporary reduction of crude oil production, refinery operation and natural gas processing and storage. Many U.S. petroleum facilities continue to recover from this devastating storm. Energy analysts note that it may take as long as 2 months (December 2004) before damaged production platforms and refineries are back to normal operations. A prolonged recovery in Gulf Coast petroleum operations may contribute to tighter supplies of petroleum products, including space-heating fuels until early 2005.

Natural Gas – Missouri's total natural gas deliveries for calendar year 2004 are expected to increase by 4 percent following two consecutive years of declining deliveries (natural gas deliveries to consumers in Missouri fell by 9,063 million cubic feet (MMcf) in 2002 and another 10,462 MMcf in 2003). Significant winter natural gas storage withdrawals and withdrawals associated with price tradeoffs between crude oil and natural gas users which encouraged fuel switching contributed to a large reduction in national storage levels through early 2004. The anticipation of increased demand for natural gas and concerns regarding overall supplies in the United States following Hurricane Ivan may continue to support relatively higher natural gas prices in 2004 and early 2005.

Milder temperatures throughout the United States in September and October have allowed additional supplies of natural gas to be placed in storage. Working gas in storage is estimated to have reached its highest level since 1991 at 3,305 billion cubic feet (Bcf) during the week of Nov. 1. This is 6 percent higher than a year ago and 9 percent higher than the five-year average. Despite a significant

increase in storage, spot natural gas prices continue to be strong as the United States enters the heating season.

Average Midwest residential natural gas prices are expected to be approximately 12 percent higher than they were last winter and household expenditures are expected to be approximately 15 percent higher. On October 13, the Missouri Public Service Commission estimated that natural gas prices for Missouri customers served by AmerenUE in the central Missouri area may see their winter heating bills increase on average by $73 this winter, a 12.5 percent increase. During the winter of 2003-2004, Missouri AmerenUE customers paid on average approximately $586 to heat their homes compared to the projection of $659 for the upcoming winter heating period. The projected cost is based on average winter temperatures and current natural gas prices. A colder winter and higher natural gas prices may increase this projected cost.

Propane (LPG - Liquefied Petroleum Gas) – Propane supplies are expected to be adequate to meet space-heating demand this winter. Through the month of October, propane supplies were at the upper band of the 5-year average for this time of year. Hurricane Ivan did not adversely impact propane production, imports and storage. Propane inventories increased through the month of October but will begin to fall slightly as supplies are moved from primary storage to secondary storage and distribution systems. The price for residential propane is expected to be higher this year in spite of higher inventory levels due to the higher price of crude oil sustained throughout the latter half of 2004.

Propane prices in the Midwest are expected to average approximately 22 percent above last winter with nearly 26 percent higher expenditures for propane-heated households.

Petroleum - Crude oil futures prices at the New York Mercantile Exchange (NYMEX) set a new record settlement price of $55.67 on Oct. 25, 2004 (most current figure at the time of publication) and could remain within the $45-$50 per barrel range throughout the remainder of 2004. Following this period, U.S. commercial crude oil prices are expected to average above $40 per barrel until mid 2005, according to the Energy Information Administration (EIA). The Organization of Petroleum Exporting Countries (OPEC) continues to produce crude oil above the self-imposed quota of 24.5 million barrels per day by nearly 5.2 million barrels per day. For the months of July and August, OPEC produced an average of 29.7 million barrels per day. In spite of the additional production, a series of hurricanes that impacted Florida, the Mid-Atlantic and Gulf Cost regions of the United States, which culminated in one of the largest hurricanes in U.S. history, Hurricane Ivan, adversely impacted U.S. crude supplies by disrupting production and imports.

Motor Gasoline - Missouri's gasoline prices are nearly 48 cents per gallon higher since the beginning of the calendar year, moving from $1.397 on Jan. 5 to $1.872 on Nov. 1. With the NYMEX record high of $55.67 per barrel on Oct. 25, an all-time record high price for crude in the United States and gasoline closing prices in excess of $1.40 per gallon (most current figures at time of publication), it is highly likely that transportation fuels in Missouri will reflect these higher prices throughout the remainder of 2004. It is anticipated that normal production and imports of crude oil and transportation fuels will resume within the next two-six weeks. This should be followed by lower crude and transportation fuel prices if crude oil supplies remain stable and refineries and pipelines operate without unplanned interruptions.

Gasoline supplies in the Midwest and Missouri remain tight. Throughout the summer months, the Midwest region retained an average of 52 million barrels of motor gasoline in storage. Since Hurricane Ivan, total motor gasoline supplies have decreased to 48.4 million barrels and are approximately 0.5 million barrels higher than the same period last year.

Electricity – It is projected that Missouri should have sufficient supplies of electricity this winter to meet consumer demand for space heating and for additional demand expected as the economy continues to recover. Missouri's electricity prices will continue to be some of the lowest in the Midwest Region; however, electric utility rates could be affected by higher prices for natural gas that is used to generate electricity.

Natural Gas

As of Oct. 29, 2004, U.S. gas in storage was estimated at 3,293 Bcf, according to the EIA. This is 239 Bcf or 7.8 percent above the 5-year average for this time of year.

According to the EIA, natural gas spot prices (Henry Hub) are likely to average about $6.18 per thousand cubic feet (Mcf) in 2004. Spot prices averaged about $5.15 per Mcf in September and $6.54 in October. Barring colder-than-normal weather this winter, the likelihood appears small that spot prices will fall below $6 per Mcf for the rest of 2004. Spot prices are expected to average $6.33 in 2005.

Demand

In Missouri, natural gas demand is projected to grow by 4.3 percent due to economic growth, weather factors, very strong oil prices and, in a comparatively new development, tight coal markets as indicated by high spot prices for coal in the eastern producing areas. Natural gas demand is expected to grow due to an overall increase in the price of crude oil and related petroleum products that may be used as a substitute fuel by electric generators. Natural gas use by Missouri electric utilities is expected to grow due to additional gas-fired electric generation, particularly new electric generation facilities currently planned to meet peak demand.

Approximately 1,261,397 or 57.5 percent of all Missouri households use natural gas for space heating. The EIA projects that natural gas demand for space heating will increase by 2.5 Mcf per Midwest household, an increase of 2.8 percent from the actual amount of gas used in the 2003-2004 winter heating period.

Supply

U.S. domestic natural gas production continues to be impacted by Hurricane Ivan. As of Nov. 3, the U.S. MMS reported that 746 MMcf per day of natural gas production in the federal offshore areas of the Gulf of Mexico remain shut in, well below the 6.5 Bcf peak reported following Hurricane Ivan.

The cumulative (Sept.13, 2004 – Nov. 2, 2004) shut-in gas production is estimated at 111.8 Bcf. The U.S. MMS reported that a total of 9 platforms were still evacuated as of Nov. 2, which is down significantly from the high of 545 platforms.

Missouri has no commercial natural gas production and relies on the availability of natural gas from out-of-state sources, particularly from the New Mexico and Gulf Coast region of the U.S.

Price

U.S. average prices for natural gas are expected to rise once the winter heating season begins. Comparing 2002 with 2003 natural gas prices, the most current data available, Missouri city-gate price rose by 33.7 percent, from $4.56 to $6.10 Mcf. Industrial customers experienced the highest increase in gas costs with an increase of 32.8 percent, moving from $6.02 to $8.00 per Mcf.

Residential customers experienced an increase of 18.6 percent, with average prices rising from $8.00 to $9.49. This is a significant increase, but is still below the record price set in 2001 at $10.47. However, a closer examination of monthly average Missouri residential natural gas prices from January through July 2004, clearly indicates that a new record may be set this year. January's average price was $9.56 per Mcf. In March, the price stood at $10.06 then moved to $12.22, $14.43 and $15.97 for the months of May through July, respectively. The implied average price for this seven-month period stands at $11.82 per Mcf.

Commercial customers saw a 17.8 percent increase, with prices climbing from $7.34 to $8.65, yet still below the high set in 2001 at

$9.82. If the average price for natural gas continues to increase during mid-winter of 2004, these price changes will be passed directly on to Missouri customers.

The EIA projects that Midwest households will see their average cost of natural gas move from $9.77 per Mcf to $10.95 per Mcf this winter. Space-heating expenditures for natural gas are expected to move from an average of $870 in the 2003-2004 winter heating season to $1,003 for the 2004-2005 winter heating season, an increase of 15.3 percent.

The Missouri Public Service Commission predicts natural gas prices for customers served by AmerenUE in the central Missouri area may see their winter heating bills increase on average by $73 this winter, a 12.5 percent increase. During the winter of 2003-2004, AmerenUE customers paid on average approximately $586 to heat their homes compared to the projection of $659 for the upcoming winter heating period. The projected cost is based on average winter temperatures and current natural gas prices. A colder winter and higher natural gas prices may increase this projected cost.

Missouri Natural Gas Sales Projection

(Million cubic feet)

			Residential	Commercial	Industrial	Utility	Total
Historical	2001	Total	116,188	64,924	67,846	32,805	281,763
	2002	Total	114,185	61,897	66,593	29,911	272,700
	2003	Total	114,613	62,758	64,022	20,845	262,238
	2004	January	21,657	10,765	7,670	1,326	41,819
		February	23,231	11,519	6,895	1,290	39,831
		March	15,345	8,071	6,163	1,449	34,104
		April	8,951	4,984	5,399	2,391	22,800
		May	4,663	3,040	4,851	1,655	14,116
		June	2,882	2,255	4,309	2,583	12,443
		July	2,376	2,072	4,232	6,321	14,855
Projection	2004	August	2,283	2,146	4,780	6,029	14,882
		September	2,614	2,145	4,378	3,905	12,780
		October	3,296	2,531	5,265	884	12,939
		November	9,414	5,015	5,847	964	18,539
		December	17,573	8,720	6,635	972	31,132
Projection	2005	January	23,966	11,631	7,553	1,376	44,526
		February	21,428	10,813	6,842	1,129	40,212
		March	16,571	8,513	6,092	1,290	32,466
	2004	Total	114,285	63,262	66,424	29,769	273,740
	03-04	Change	-0.2%	+0.8	+3.7	+42.8%	+4.3%

Propane

As in the case with natural gas, propane expenditures per household are expected to rise this winter in all regions of the United States, reflecting higher fuel prices and expected colder weather than last year. This winter, supplies of propane are projected to be adequate to meet consumer demand. At the beginning of October 2003, the U.S. supply of propane was 62.5 million barrels compared to 68.8 million barrels this year, well within the normal range and about 10 percent above year-ago levels. By winter's end, propane supplies are expected to be 31.4 million barrels, approximately 4 million barrels above those of last year.

Demand

The winter of 2003-2004 was considered to be relatively mild, yet propane demand averaged a record 1.48 million barrels per day, 3.2 percent above the previous heating season. The strong demand for propane was attributed to petrochemical feedstock demand and a record corn crop that required substantial amounts of propane to dry corn. Demand for propane in the United States is projected to grow by 1 percent compared to last year due in part to a recovering U.S. economy, a larger corn crop and projected colder-than-average weather.

In Missouri, daily consumption of propane for the winter of 2003-2004 was 885.9 barrels per day compared to 927.8 barrels per day for the winter of 2002-2003, a reduction of 41.9 barrels per day or 4.5 percent. The reduction in propane demand was due to milder winter temperatures that resulted in lower space heating demand by propane consumers.

In Missouri, sales of propane for the period January through June 2004 were lower than the comparable period last year. From January through June 2004, prime supplier sales of propane in Missouri were 5.1 million gallons compared to 5.5 million gallons for the same period last year, a difference of 0.4 million gallons or 7 percent. The reduction in propane sales and consumption may have been the result of milder winter temperatures that allowed more propane to remain in storage. If this trend continues through the end of the year, it may be unlikely that propane consumption will increase this year compared to last year.

Approximately 293,803 or 13.4 percent of all Missouri households use propane as their primary heating source.

Supply

U.S. and Midwest inventories of propane have grown steadily this year and supplies are considered to be more than adequate to meet consumer demand this winter.

According to the EIA, U.S. domestic inventories of propane gained a record 8.6 million barrels during September, moving well above the previous monthly record set during September 1970 that totaled 4.6 million barrels.

For the week ending Oct. 29, 2004, the nation's primary supply of propane was estimated at 67.5 million barrels, a level 0.7 million barrels above the same period last year. Moreover, the record September build also contributed to the above average seasonal build (April through September) that totaled more than 40 million barrels compared with the most recent 5-year average build of 35.1 million barrels.

With U.S. inventories near the upper boundary of the average range for this time of year, the propane industry has built a small but important cushion prior to the start of the winter heating season.

As of Oct. 29, Midwest propane inventories stood at an estimated 22.5 million barrels compared to 23.6 million barrels at this time last year, a decrease of 1.1 million barrels or 4.6 percent. The Midwest, the largest propane

importer, via Canada, began the 2003-2004 heating season at 24.6 million barrels and has added 14.8 million barrels through the summer months.

On Oct. 29, Gulf Coast inventories stood at 36.3 million barrels compared to 35.1 million barrels at this time last year, an increase of 1.2 million barrels or 3.4 percent.

Price

Propane is a by-product of crude oil and natural gas processing. As such, spot propane prices are primarily determined by crude oil and natural gas wellhead prices. Retail propane prices are influenced by the same factors as spot prices but are also influenced by other heating energy prices, such as heating oil and natural gas as well as weather. Due to higher crude oil and natural gas prices seen throughout most of 2004, particularly during the later half of the year, Midwest residential propane prices for the upcoming winter season are expected to average $1.59 per gallon compared to $1.30 per gallon last year.

As of Nov. 1, 2004, Missouri's average statewide residential propane price was $1.56 per gallon compared to $1.18 on Nov. 3, 2003, an increase of $0.38 per gallon or 32.2 percent. At $1.56, Missouri retail prices are currently $0.03 per gallon below the average price projected for the Midwest by EIA for this winter.

During the 2003-2004 winter heating season, Midwest households consumed an average of 882 gallons of propane at an average retail price of $1.30. Total propane heating expenditures were $1,147.

The EIA projects that during the 2004-2005 heating season, Midwest residential consumers will use an average of 907 gallons of propane, a 2.8 percent increase from the prior year. The average price is projected at $1.59 per gallon, up from $1.30 per gallon or 22.3 percent. Total propane expenditures are estimated at $1,443 per household compared to $1,147 last year, an increase of 25.8 percent.

Crude Oil

West Texas Intermediate (WTI) crude oil prices, the benchmark used for United States crude oil prices at the NYMEX, averaged above $45 per barrel since June 1 and are expected to average just over $51 per barrel, about $20 per barrel higher than the fourth quarter of 2003. Since June 1, the price for crude oil in the United States has set new records, closing at all-time settlement prices during 25 trading sessions, the most recent on Oct. 25 when prices settled at $55.67 per barrel (most current figure available when published).

Potential price spikes remain a danger given the uncertainties surrounding the continued recovery of production from the Gulf Coast region following Hurricane Ivan and output and exports from Iraq. Civil unrest in the Niger Delta has threatened to close or significantly reduce output by the 5th largest crude oil supplier to the United States.

In addition, the current low oil inventory levels in the U.S. and world oil production capacity provides only a limited cushion against any potential price spikes.

U.S. Outlook

According to the EIA, U.S. petroleum demand is projected to average 20.4 million barrels per day during 2004, a 2 percent increase over the 2003 average. Mainly transportation fuels lead this increase. For 2004 and 2005, motor gasoline demand growth is projected to average 1.3 and 1.7 percent per year, respectively.

U.S. commercial supplies of crude oil on Oct. 29 stood at 289.7 million barrels or 2.2 million barrels lower when compared to this time last year. Inventory levels are 19.7 million barrels above the Lower Operating Inventory Level of 270 million barrels, a level pre-determined by the U.S. Department of Energy below which localized distribution and shipping problems and intermittent product outages become increasingly likely. Supplies of crude oil have strengthened over the last month and total U.S. supplies are within the 5-year average for this time of year.

As of Nov. 3, the U.S. MMS reported that 215 thousand barrels per day of oil production in the federal offshore areas of the Gulf of Mexico remain shut in. The current level of shut-ins is well below the peak of 1.3 million barrels per day of oil. The cumulative (Sept. 13, 2004 – Nov. 2, 2004) shut-in oil production is estimated at about 27 million barrels. MMS reported that a total of 9 platforms and 1 rig were still evacuated as of Nov. 2, which is down significantly from the high of 545 platforms.

Midwest Outlook

Since the beginning of September, crude oil supplies in the Midwest have weakened with supplies reported at 59.2 million barrels for the week ending Oct. 29 (most current figure when published) compared to 60.1 for the week ending Sept. 24. Current Midwest supplies of crude oil are 2.9 million barrels lower than this time last year, which stood at 62.1 million barrels on Oct. 31, 2003.

Gulf Coast Region supplies (a significant source of motor gasoline and diesel fuel to the Midwest) were higher compared to this time last year. An estimated 152.1 million barrels were reported in storage for the week ending Oct. 29 (most current figure when published) compared to 150.6 for the week ending Oct. 31, 2003, approximately 1.5 million barrels higher than this time last year.

Motor Gasoline

Higher crude oil prices have helped to buoy gasoline prices throughout the United States and in Missouri. The combination of higher consumer demand, higher crude oil prices and the uncertainty of adequate supplies of motor gasoline have helped to drive prices higher and to retain these prices throughout most of the summer driving season. This trend is expected to continue through fall as several refineries continue to recover from the Hurricane Ivan.

From Jan. 4 through Nov. 1, 2004, the average retail price for regular unleaded in the United States and Missouri have increased 34 and 26 percent, respectively. Missouri's price has risen from a January price of $1.39 per gallon to $1.87 on Nov. 1; and, the U.S. average retail price increased from $1.51 to $2.03 per gallon.

Gasoline supplies in the Midwest and Missouri are expected to remain tight throughout the remainder of 2004 due to strong demand for motor gasoline while Gulf Coast refiners recover from Hurricane Ivan and perform seasonal maintenance. The U.S. economy continues to recover and could support higher consumer demand throughout the fall resulting in prolonged higher retail prices and lower supplies as refiners move from summer gasoline to winter heating oil.

Demand

For 2004, motor gasoline sales in Missouri may increase by approximately 1.9 percent over 2003, slightly below last year's demand growth of 2.2 percent. Projected sales for 2004 are 3.18 billion gallons, up from 3.12 billion gallons in 2003. However, if the Missouri average retail price for motor gasoline this fall continues on its present course as a result of higher crude prices or unexpected interruptions in refinery or pipeline operations, the projected increase of 1.9 percent in demand may be smaller.

Since February, U.S. consumer demand for motor gasoline surged in excess of 9 million barrels per day, an increase of over 600,000 barrels per day compared to the same period last year. U.S. petroleum demand is expected to average 20.8 million barrels per day in 2004.

Comparing the period January-August 2003 to the same period in 2004, Missouri demand has increased by 34.2 million gallons or 1.6 percent, increasing from 2,057.6 million gallons to 2,091.87 million gallons.

Total 2004 motor gasoline consumption is projected to increase by 1.8 percent compared to 2003, moving from 3,119 million gallons to 3,179 million gallons.

The domestic gasoline supply system is vulnerable to severe price shocks if major refinery or pipeline outages occur, as experienced by Hurricane Ivan. There are two factors that could reduce the risk of sharply higher pump prices in the near-term. First, a more rapid decline rate for crude oil prices than currently expected (crude prices are expected to fall in the mid- to- high $40 range per barrel until the end of 2005). And, second, a solid improvement in the availability of gasoline production and import volumes from those seen in recent months.

Supply

Midwest gasoline supplies stand at 48.4 million barrels as of Oct. 29 (most current figure when published) compared to 47.9 million barrels for the same time last year. The Gulf Coast Region, a principle supplier of motor gasoline to the Midwest, currently retains a supply of 63.4 million barrels (most current figure when published) compared to 61.4 million barrels at this time in 2003.

U.S. refinery utilization has improved over the last several weeks following Hurricane Ivan when utilization rates fell to approximately 88 percent. Gulf coast refineries are resuming normal operations; however, several will

perform scheduled maintenance as those systems move into winter petroleum refining. Total available supplies of motor gasoline have improved since the beginning of Oct. following the completion of fall season maintenance and repairs completed by some refineries following Hurricane Ivan.

Gasoline imports are reported at 0.8 million barrels per day on a four-week average through Oct. 29, 2004 (most current figure when published) compared to 0.7 million barrels per day for the same period ending Oct. 31, 2003.

Price

The EIA projects that U.S. retail regular gasoline prices are expected to average $1.98 per gallon during the fourth quarter. It is anticipated that Missouri's average retail price may peak near the U.S. average during the quarter, but will continue to trend below the U.S. average price throughout this period.

Missouri Gasoline Sales Projection

(Millions of Gallons)

			Total All Grades	Historical (prior year)	% Change
Historical	2000	Total	3,017.6	2,998.2	+ 0.6
	2001	Total	2,991.6	3,017.6	- 0.8
	2002	Total	3,048.5	2,991.6	+ 1.9
	2003	Total	3,117.8	3,048.5	+ 2.2
	2004	January	262.2	232.4	+ 11.3
		February	243.8	283.3	- 16.2
		March	229.5	218.9	+ 4.6
		April	262.7	251.1	+ 4.4
		May	270.9	253.9	+ 6.2
		June	273.5	272.3	+ 0.4
		July	271.8	267.0	+ 1.7
		August	277.4	279.7	- 0.8
Projection		September	288.3	277.8	+ 3.6
		October	257.6	258.9	- 0.5
		November	274.3	270.6	+ 1.3
		December	266.8	252.9	+ 5.2
	2004	Total	3,157.1	3,117.8	+ 1.8
Projection	2005	January	250.3	262.2	- 4.5
		February	267.0	243.8	+ 9.5
		March	252.0	229.5	+ 9.8

Electricity

Demand

According to the EIA, U.S. electricity consumption is projected to increase in all the end-use sectors. The highest growth rate is projected for the commercial sector at an annual rate of 2.2 percent, followed by the industrial sector with 1.6 percent and the residential sector at 1.4 percent. Residential demand, which grew faster in the past, varies by season, day and time of day. Driven by summer peaks, the frequency of residential demand increases the peak-to-base load ratio for electric suppliers, which must rely on quick-starting turbines or internal combustion units to meet peak demand. It is estimated that from 2000 to 2003, U.S. electric suppliers added approximately 69 gigawatts (GW) of peaking capacity.

The projected growth in U.S. commercial and industrial electricity demand is expected to result in higher additions of base load generating capacity. From 2000 to 2003, 112 GW of combined-cycle capacity, which is efficient in both base load and cycling applications, was installed in the United States. As a result, only about 12 GW of currently unplanned base load capacity is projected to be added in the United States over the next six years (2010). After 2010, EIA anticipates more rapid growth in base load capacity.

Supply

In 2000 and 2001, higher U.S. wholesale electricity prices encouraged the development of new generation facilities. Since 1985, new U.S. capacity additions were 27 GW in 2000, 42 GW in 2001 and 72 GW in 2002, and utilities were on pace to build another 45 GW by the end of 2003. However, developers have reported that they delayed or canceled planned plants because the recent additions to capacity are expected to meet near-term demand.

New U.S. additions are expected to slow after 2003, and that trend is expected to continue in the near term. Most of the recent additions are natural-gas-fired. Of the 187 GW added between 2000 and 2003, 175 GW were natural-gas-fired, including 110 GW of combined-cycle capacity and 65 GW of combustion turbine capacity, which is used mainly when demand for electricity is high. Approximately 5 GW of new renewable plants—mostly wind—and less than 1 GW of new coal-fired capacity were added over the same period.

According to the Missouri Public Service Commission, as of Sept. 15, Missouri investor owned electric utilities' (IOUs) net capacity is estimated at 16,699 MW through 2004. Of this amount, 15,198 MW is self-generation with the balance of 1,501 MW in net purchases.

The aggregated IOUs forecasted peaks (including Demand Side Management programs implemented by electric suppliers) are estimated at 13,973 MW for 2004. An additional 2,009 MW is required for reserves. Therefore, the capacity requirement to meet this aggregated peak demand with adequate reserves is estimated at 15,982 MW. This results in excess capacity of 717 MW. It is estimated that in the absence of additional generation capacity or reduction in demand and as purchased power contracts expire, Missouri's available capacity from its IOUs will fall from 16,699 MW to 16,100 in 2005. Capacity requirements are estimated at 16,273 resulting in a net shortfall in capacity by an estimated 173 MW in 2005. However, utilities are planning to have adequate capacity through the addition of purchased power contracts and through the building of additional combustion turbines in Missouri.

In addition to utility-based electric generation, the Energy Center (EC) has identified several facilities – university campuses, office buildings, industrial sites and waste waster treatment plants – that have small on-site combined heat and

power (CHP) facilities not included in EIA's inventory. EC estimates that about 100 kW of small solar photovoltaic (PV) generation units and 65 kW of small wind turbines are currently installed in Missouri, collectively generating about 310 MWh of electricity.

An additional source of "green power" consumed by Missourians is two Kansas-based wind farms: Jeffrey Energy Center, which came on line in 1999, and Gray County Wind Farm, which came on line in 2001. Aquila Networks, Inc. has a 16 percent ownership share (0.12 MW) of the Jeffrey wind turbines and purchases power on long term contract from the Gray County facility. Aquila serves as a wind-based electric supplier to Springfield City Utilities and Boone County Electric Cooperative who, in turn, sells the power to their customers.

Price

Average U.S. electricity prices, in real 2002 dollars, are expected to decline by 8 percent, from 7.2 cents per kilowatthour in 2002 to 6.6 cents in 2008. Generation expense currently makes up 64 percent of electricity prices. The distribution component accounting for about 28 percent of total electricity price, is expected to decline at an average annual rate of 0.7 percent as the cost of the distribution infrastructure is spread out over a growing amount of total electricity sales. Transmission prices are expected to increase at an average annual rate of 0.9 percent because of the increased investment needed to meet the projected growth in electricity demand. Delivered electricity prices for residential, commercial, and industrial customers are projected to decline annually on average 0.4, 0.8 and 0.75 percent, respectively. From 2002 to 2003, Missouri's average price for electricity fell by 1.6 percent, dropping from 6.09 cents to 5.99 cents per kWh.

During this period, residential prices fell 1.2 percent, from 7.06 cents to 6.97 cents per kWh. Commercial prices fell 1.5 percent, from 5.88 cents to 5.79 cents per kWh and industrial rates fell 2 percent from 4.42 cents to 4.33 cents per kWh. Approximately 538,606 or 24.5 percent of all Missouri households use electricity as their primary heating source.

Missouri Electricity Sales Projection

(Millions of kWh)

			Residential	Commercial	Industrial	Other	Total
Historical	2000	Total	29,577	25,870	16,074	1,100	72,621
	2001	Total	30,164	26,023	15,809	1,195	73,191
	2002	Total	31,677	26,789	15,334	1,173	74,973
	2003	Total	30,944	26,580	15,627	1,205	74,356
	2004	January	3,260	2,395	1,292		6,948
		February	2,984	2,197	1,252		6,434
		March	2,391	2,162	1,290		5,844
		April	1,958	2,083	1,344		5,385
Projection		May	1,902	2,139	1,332		5,374
		June	2,565	2,376	1,315		6,256
		July	3,410	2,605	1,389		7,404
		August	3,478	2,689	1,407		7,574
		September	2,629	2,178	1,333		6,140
		October	1,903	2,108	1,347		5,358
		November	2,001	2,164	1,208		5,373
		December	2,789	2,056	1,332		6,177
	2004	Total	31,270	27,152	15,841		74,263
	03-04	Change	1.0%	2.1%	1.3%		-0.1%

Missouri Electric Generating Capacity Planned and Added Since July 2001

Macon Municipal Utilities - Nemo Grain Plant in Macon, **10 MW NGSC** On Line: May 2003

Ameren - Columbia Energy Center in Columbia, **144 MW NGSC** On Line: Aug 2001

UMC - UMC Plant in Columbia, **26 MW NGSC** On Line: Jan 2002

Ameren - Peno Creek Plant in Bowling Green, **188 MW NGSC** On Line: May 2002

GPP - KCPL in Platte County, **900 MW Coal** On Line: 2010

Aquila - South Harper Site in Peculiar, **341 NGSC** On Line: Jun 2005

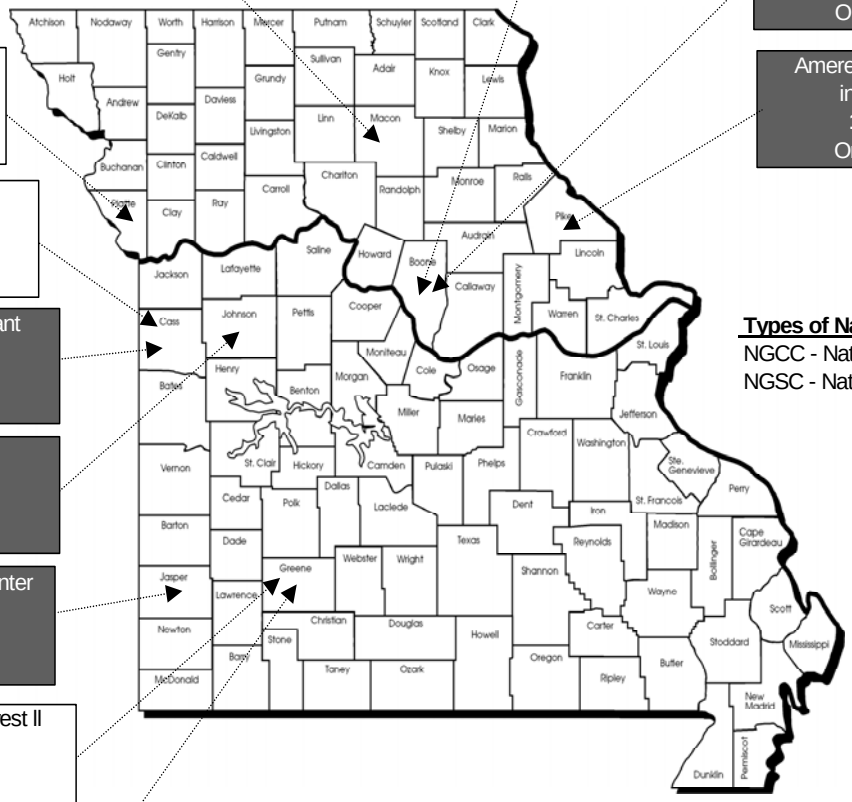
Aquila/Calpine - Aries Plant in Pleasant Hill, **580 MW NGCC** On Line: Jan 2002

AECI - Holden Plant in Holden, **321 MW NGSC** On Line: Jun 2002

Empire District - Energy Center 3 & 4 in La Russell, **100 MW NGSC** On Line: Apr 2003

Springfield CU - Southwest II in Springfield, **275 MW Coal** On Line: Unknown

Springfield CU - McCartney Plant in Springfield, **100 MW NGSC** On Line: May 2002



Types of Natural Gas Generation

NGCC - Natural Gas Combined Cycle

NGSC - Natural Gas Simple Cycle

Project Status

Announced

Under Construction

Operational

Prepared by: MO Department of Natural Resources, Energy Center, 10-20-04

Source: MO Public Service Commission & MO Department of Natural Resources, Air Pollution Control Program